

CLAIMS

1. Use of a primer or primer pair for DNA fingerprint analysis, characterized in that with the primer or primer pair a fingerprint is obtainable from humans as well as from animals as well as from plants as well as from microorganisms, and wherein the primer or primer pair hybridize to a DNA which codes the endonuclease, the reverse transcriptase or the RNase H of a copia or copia-like element, in particular of coconut (*Cocos nucifera L.*).

2. The use according to claim 1, characterized in that with the primer or primer pair a fingerprint is obtainable with DNAs from the entire animal and plant kingdom, comprising

- (a) the animal kingdom with all its subkingdoms, preferably metazoa including the subphylums of the vertebrates, preferably the class of mammals, including in particular the family of the Hominids and the family of the Bovidae, including the species *Bovis taurus* and *Ovis aries* as well as all races and varieties which are derivable from the corresponding species;
- (b) the plant kingdom with all its subkingdoms, in particular Mycobionta and Cormobionta, preferably the division of the Spermatophyta, therein preferably the class of Monocotyledonae with its families of the Areaceae and its representatives of the species *Cocos nucifera* or the family of Poaceae with its representatives of the species *Hordeum vulgare* and *Zea mays*, in addition most preferably the class of the Dicotyledonae with its families, for example Solanaceae and its representatives of the species *Solanum tuberosum*, *Nicotiana tabacum*, *Petunia hybrida*, or e.g., the family of Brassicaceae with its representative of the species *Brassica napus* or the family of the Chenopodiaceae with its representative *Beta vulgaris* or the family of Vitaceae with its representatives, for example, *Vitis vinifera* as well as all varieties and cultivars which are derivable from the corresponding species; and
- (c) humans; and

(d) microorganisms comprising prokaryotic microorganisms, preferably gram-positive bacteria such as, for example, lactic acid bacteria, Sarcina and corynebacteria, and gram-negative bacteria such as, for example, Neisseria and enterobacteria, and eukaryotic microorganisms comprising fungi, preferably phycomycetes such as, for example, Phytophtora, and ascomycetes such as, for example, yeast.

Sub B2

Claim 1

3. The use according to claim 1 or 2, characterized in that the DNAs to be analyzed are amplified with the primer or primer pair via PCR and subsequently separated on a gel according to the length of the PCR products.

4. The use according to claim 3, characterized in that the gel is a sequencing gel.

5. The use according to claim 3 or 4, characterized in that in a further step a Southern blot is performed and the DNAs transferred onto a membrane are visualized by hybridization with a probe.

6. The use according to claim 5, characterized in that the probe is the primer or the primer pair of any one of the preceding claims.

7. The use according to any one of claims 1 to 6, characterized in that the primer or primer pair is labeled.

Sub B3

Claim 1

8. The use according to claim 7, characterized in that the label is a non-radioactive label, preferably digoxigenin, biotin, a fluorescence dye, a dye or a radioactive label, preferably ^{32}P .

Claim 1

9. The use according to any one of claims 1 to 8, characterized in that the primer displays any one of the sequences as represented in Table 2.

Sub B4

Claim 1

10. The use according to any one of claims 1 to 9, characterized in that the primer comprises a sequence which overlaps with any one of the sequences represented in table 1 or 2.

Claim 11

11. The use according to any one of claims 1 to 10, characterized in that the fingerprint analysis is used for studying biodiversity, genetic relationship, taxonomy, and, in particular, in the field of forensic medicine, breeding, protection of plant varieties, gene library management, population genetics and for studies on evolution.

Claim 12

12. A primer for the use according to any one of the preceding claims, characterized in that the primer comprises any one of the sequences represented in Table 2 or a sequence which overlaps with any one of the sequences represented in table 1 or 2.

Claim 13

13. Kit comprising at least one primer and preferably at least one primer pair which hybridizes to the copia-like element of coconut depicted in Figure 2b or characterized in any one of claims 1 to 12.

Claim 14

14. Use of at least one primer and preferably at least one primer pair characterized in any one of claims 1 to 12 for the preparation of a kit according to claim 13.

Claim 15

15. Use of a primer or primer pair which hybridizes to the copia-like element of coconut depicted in Figure 2b for the detection of recombination events in cross-breeding, in particular in the breeding of animals and plants.